Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1, 7, 8, 14, 15, 19, 20, 26, and 29 are pending in the application, with claims 1, 8, 15, and 20 being the independent claims. Claims 1, 8, 20, and 29 are sought to be amended. Claims 2-4, 9-11, 21-23, 28, 30, and 31 are sought to be cancelled without prejudice to or disclaimer of the subject matter therein. Applicant reserves the right to prosecute similar or broader claims, with respect to the cancelled and/or amended claims, in the future. These changes are believed to introduce no new matter, and their entry is respectfully requested.

The claims presented in this Application should be interpreted solely based on the file history of this Application, not the file history of any predecessor or related application. With respect to this application, Applicant hereby rescinds any and all disclaimers of claim scope made in any parent application(s), any predecessor application(s), and any related application(s). The Examiner is advised that any previous disclaimer of claim scope, if any, and any references that allegedly caused any previous disclaimer of claim scope, may need to be revisited. Nor should any previous disclaimer of claim scope, if any, in this Application be read back into any predecessor or related application.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Interview Summary

Pursuant to 37 C.F.R. § 1.133, Applicant provides the following statement of substance of the interview.

Applicant and Applicant's representative, Mr. Michael R. Malek, wish to thank Examiner Siu M. Lee for the interview by telephone on October 20, 2010. During the interview, Applicant's representative and the Examiner discussed the alleged rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103 presented in the Office Action. An agreement was reached that there is an inadvertent typographical error in the Office Action. Claims 15 and 19 are allegedly rejected under 35 U.S.C. § 102 and claims 1-4, 7-11, 14, 20-23, 26, and 28-31 are allegedly rejected under 35 U.S.C. § 103.

Objections to the Claims

Claims 8-11, 14, 20-23, 26, 30, and 31

Claims 8-11, 14, 20-23, 26, 30, and 31 stand objected to because of alleged informalities. Without acquiescing to the merits of this allegation, Applicant has amended independent claims 8 and 20 to accommodate the Examiner's objection. Dependent claims 14 and 26 likewise accommodate the Examiner's objection for the same reasons as the independent claims from which they respectively depend and further in view of their own respective features. Without acquiescing to the merits of this allegation, Applicant has cancelled 9-11, 21-23, 30, and 31 without prejudice to or disclaimer of the subject matter therein. Applicant contends that the canceling of claims 4, 5, 12, and 13 does not give rise to any implication regarding whether the Applicant

agrees with or acquiesces to this objection. Accordingly, Applicant respectfully requests the objection to claims 8, 14, 20, and 26 be reconsidered and withdrawn

Rejections under 35 U.S.C. § 112

Claims 1-4, 7, 28, and 29

Claims 1-4, 7, 28, and 29 stand rejected under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the written description requirement. Without acquiescing to the merits of this allegation, Applicant has amended independent claim 1 to accommodate the Examiner's rejection. Applicant believes independent claim 1 complies with the written description requirement. Dependent claim 7 likewise complies with the written description requirement for the same reasons as independent claim 1 from which it respectively depends and further in view of its own respective features. Applicant has amended the dependency of dependent claim 29 to be dependent upon claim 8. Dependent claim 29 complies with the written description requirement for the same reasons as independent claim 8 from which it respectively depends and further in view of its own respective features. Without acquiescing to the merits of this allegation, Applicant has cancelled 1-4 and 28 without prejudice to or disclaimer of the subject matter therein. Applicant contends that the canceling of claims 1-4 and 28 does not give rise to any implication regarding whether the Applicant agrees with or acquiesces to this rejection. Accordingly, Applicant respectfully request the rejection to claims 1, 7, and 29 under 35 U.S.C. § 112, first paragraph, be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 102

Claims 15 and 19

Claims 15 and 19 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by United States Patent Publication No. 2001/0012783 to Peeters et al. ("Peeters"). Applicant respectfully traverses the rejection and provides the following arguments to support patentability.

Different parameters relating individual carriers in a discrete multi-tone (DMT) communication system are stored and used for modem operations. (Specification, p. 2, ll. 1-19.) Instead of storing each of the different parameters for each individual carrier, this Application groups carriers in a multi-carrier system and defines parameters relating to carrier groups rather than individual carriers. (Specification, p. 7, ll. 24-26.) Specifically, independent claim 15 recites at least the feature of "*determining at least one dynamically variable sized carrier group from the plurality of carriers used for communication in the DMT communication system.*" After grouping the plurality of carriers into the "*at least one dynamically variable sized carrier group*," the method of independent claim 1, "*determin[es] a worst case carriergroup signal-to-noise ratio (SNR) for the plurality of carriers within the at least one dynamically variable sized carrier group.*" The method of independent claim 1 then "*determin[es] a carriergroup bitloading and a carriergroup gain for the plurality of carriers within the at least one dynamically variable sized carrier group based on the worst case carriergroup SNR.*"

Nowhere does Peeters disclose at least the feature of "*determining a worst case carriergroup signal-to-noise ratio (SNR) for the plurality of carriers within the at least one dynamically variable sized carrier group*" as recited by independent claim 15. Rather, Peeters discloses determining a SNR of all of the carriers, namely all of the

multiple carriers f_0 through f_{4095}. (Peeters, ¶ [0019].) In other words, independent claim 15 determines "*at least one dynamically variable sized carrier group*" then determines the "*worst case **carriergroup** signal-to-noise ratio (SNR)... within the at least one dynamically variable sized carrier group*", whereas Peeters discloses determining the SNR of all of the multiple carriers f_0 through f_{4095} then grouping the multiple carriers f_0 through f_{4095} after determining a number of bits that can be modulated on each of the multiple carriers f_0 through f_{4095} using these SNRs. (Peeters, ¶¶ [0019], [0021].)

Additionally, the Examiner, in the Office Action, alleges that the multi-carrier system of Peeters "measures the signal-to-noise ratio (SNR) for each carrier f_0 through f_{4095}, paragraph 0019, lines 4-13, it is inherent that among the SNR measured within the plurality of carrier group, there is a lowest SNR among the measured signal to noise ratio, the examiner interprets this lowest signal to noise ratio as the worst case SNR." (Office Action, p. 6.) According to the Examiner, there is a lowest SNR among the measured signal to noise ratio. Even if this assertion is true, which Applicant disputes, this lowest SNR proposed by the Examiner corresponds to the lowest SNR for all of the multiple carriers f_0 through f_{4095}, not "*for the plurality of carriers within the at least one dynamically variable sized carrier group*" as recited by independent claim 15. Therefore, the lowest SNR as interpreted by the Examiner is not the "*worst case carriergroup signal-to-noise ratio (SNR) for the plurality of carriers within the at least one dynamically variable sized carrier group*" as recited by independent claim 15.

Further, independent claim 15 recites at least the feature of "*determining a carriergroup bitloading and a carriergroup gain for the plurality of carriers within the at least one dynamically variable sized carrier group based on the worst case carriergroup SNR.*" Nowhere does Peeters teach or suggest that its bitloading and gain

parameters are "*based on the worst case carriergroup SNR*" as recited by independent claim 15. The multi-carrier system of Peeters measures a signal-to-noise ratio (SNR) for all of the multiple carriers f_0 through f_{4095}. (Peeters, ¶ [0019].) From these SNRs, the multi-carrier system of Peeters determines a number of bits that can be modulated on each of the multiple carriers f_0 through f_{4095}. (Peeters, ¶ [0019].) Peeters explicitly discloses that its bitloading parameter for a particular carrier is determined using the SNR of that carrier, not "*the worst case carriergroup SNR*" as recited by independent claim 15. Additionally, the multi-carrier system of Peeters groups the carriers into subsets of carriers "where the applied gain is obtained for through linear interpolation." (Peeters, ¶ [0021].) Peeters, therefore, explicitly discloses that its gain parameter for a particular carrier is obtained through linear interpolation, not "*based on the worst case carriergroup SNR*" as recited by independent claim 15.

In summary, Peeters measures signal-to-noise ratio of all the carriers to determine a number of bits for each of the carriers then groups each of the carriers into groups having a same number of bits and determines a gain for each group through linear interpolation. In contrast, independent claim 15 groups all of the carriers into dynamically variable sized carrier groups then determines a worst case signal-to-noise ratio for the carriers in each of these groups and determines a carriergroup bitloading and a carriergroup gain for each of these groups based upon this worst case signal-to-noise ratio. As a result, Peeters does not teach or suggest at least the features of "*determining a worst case carriergroup signal-to-noise ratio (SNR) for the plurality of carriers within the at least one dynamically variable sized carrier group*" and "*determining a carriergroup bitloading and a carriergroup gain for the plurality of carriers within the at least one dynamically variable sized carrier group based on the worst case*

carriergroup SNR" as recited by independent claim 15. Consequently, Peeters cannot anticipate independent claim 15. Dependent claim 19 is likewise not anticipated by Peeters for the same reasons as independent claim 15 from which it depends and further in view of its own respective features. Accordingly, Applicant respectfully requests that the rejection of claims 15 and 19 under 35 U.S.C. § 102(b) be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 102

Claims 1-4, 7-11, 14, 20-23, 26, and 28-31

Claims 1-4, 7-11, 14, 20-23, 26, and 28-31 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Peeters in view of United States Patent Publication No. 2004/0054852 to Ginesi et al. ("Ginesi"). Applicant respectfully traverses the rejection and provides the following arguments to support patentability.

Applicant has amended independent claim 1 to substantially incorporate at least some of the features that were previously recited by dependent claims 2 through 4. Specifically, Applicant has amended independent claim 1 to recite at least the features of "*a carriergrouping means configured to group the plurality of carriers into a plurality of dynamically variable size carrier groups based on the SNR parameters, to determine a carriergroup SNR parameter for each of the plurality of dynamically variable size carrier groups, the carriergroup SNR parameter being a worst case SNR parameter from among the SNR parameters corresponding to the plurality of carriers within each of the plurality of dynamically variable size carrier groups, and to determine carriergroup bitloading and gain parameters for each of the plurality of dynamically variable size carrier groups based upon the worst case SNR parameter for each of the plurality of*

dynamically variable size carrier groups." Applicant has amended independent claims 8 and 20 in a substantially similar manner. Each of these independent claims recite similar features as independent 15 that, as discussed above, are likewise not taught or suggest by Peeters. Ginesi does not teach or suggest these missing features of these independent claims nor does the Office Action so allege; therefore, the combination of Peeters and Ginesi does not render independent claims 1, 8, and 20 obvious. Without acquiescing to the merits of this allegation, Applicant has cancelled dependent claims 2-4, 9-11, 21-23, 28, 30, and 31 without prejudice to or disclaimer of the subject matter therein. Applicant contends that the canceling of dependent claims 2-4, 9-11, 21-23, 28, 30, and 31 does not give rise to any implication regarding whether Applicant agrees with or acquiesces to this rejection under 35 U.S.C. § 103(a). Dependent claims 7, 14, 26, and 29 are likewise not rendered obvious by the combination of Peeters and Ginesi for the same reasons as the independent claims from which they respectively depend and further in view of their own respective features. Accordingly, Applicant respectfully request that the rejection of claims 1, 7, 8, 14, 20, 26, and 29 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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